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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/395,179	09/14/1999	KENICHI FUNAMOTO	P7459-9002	5562

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EXAMINER

LAVILLA, MICHAEL E

ART UNIT PAPER NUMBER

1775

DATE MAILED: 04/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/395,179

Applicant(s)

FUNAMOTO ET AL.

Examiner

Michael La Villa

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2004.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13-44 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 29-35 and 37-43 is/are allowed.  
6) ☒ Claim(s) 13-28, 36, and 44 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.


### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 14 September 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
MICHAEL E. LAVILLA PH.D.  
PRIMARY EXAMINER

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:
  2. The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
  3. Claims 26, 28, 36, and 44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Please refer to the reasons of record in the Office Action mailed on 23 July 2004.
  4. Claims 13-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.
- Regarding Claims 13 and 19, it is unclear where applicant derives support for the introduced limitation pertaining to “no portion of the nickel-based layer *being electroplated*[.]” The cited language on page 18 of the Specification is “formed by plating.” The proposed language “being electroplated” pertains to narrower subject matter, not equivalent in scope with “formed by plating.” It is unclear how

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applicant derives support for the resulting broader claim, in view of the narrower subject matter that is to be excluded.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 13-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Slattery USP 4,737,418 for the reasons of record in the Office Action mailed on 16 July 2002.

***Response to Amendment***

- I. In view of applicant's amendments and arguments, applicant traverses the section 112, first paragraph rejection of the Office Action mailed on 23 July 2004. Applicant argues that support for the limitations of Claims 26 and 28 is found at

pages 7 and 8 of the Specification where Figure 1 is discussed. However, Figure 1 does not relate to structures having the claimed T1/T2 thickness ratios, since T1/T2 would appear to be 1, which is outside the claimed range. Thus, it is unclear how this discussion of Figure 1 provides support for the invention as now claimed. The discussion beginning at page 17 appears to relate to a different preferred embodiment, pertaining to laminates having the claimed T1/T2 ratio. The claims refer to "average thickness" whereas the discussion at page 8 refers to "thickness". It is unclear where support for specifying "average thickness" originates.

- II. In view of applicant's amendments and arguments, applicant traverses the section 103 rejection over Slattery of the Office Action mailed on 23 July 2004. Applicant argues that Slattery teaches electroplated layers, whereas applicant's claim precludes electroplated layers. Applicant's characterization of Slattery's nickel layer as being formed by electroplating is not disputed. To obviate rejection, however, applicant's claimed layer characterized by product-by-process claim limitations must necessarily be compositionally and structurally different from that of Slattery. Hence, whereas the claimed layer cannot be formed by electroplating, the conclusion that the

claimed layer is not indistinguishable from the electroplated layer of Slattery does not necessarily follow. Applicant has described electroplating as forming unacceptable levels of micro-holes and micro-cracks. However, other methods of layer formations may provide micro-holes and micro-cracks. Thus, even though Slattery may form electroplated layers which contain micro-holes and micro-cracks, such layers of Slattery may be indistinguishable from non-electroplated layers that are encompassed by the claim. Since applicant's claims do not specify process conditions that would necessitate exclusion of the layers of Slattery from being encompassed by the claimed subject matter, rejection is appropriate.

***Allowable Subject Matter***

8. Claims 29-35 and 37-43 are allowed. The subject matter of these claims is not taught or suggested by the prior art of record or by the reviewed prior art. Particularly, laminates formed by the claimed reduction of 30 to 60% and concomitant press- and diffusion bonding are not taught or suggested. Slattery's dogbone structures would be expected to be inconsistent with laminates formed by the claimed reduction. A dogbone laminate is incompatible with a reduction of a thicker structure because any reduction process of the sort claimed would be expected to eliminate the dogbone structure. Hence, making a thicker laminate

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and reducing it to the disclosed structures of Slattery by the claimed method would be expected to be technically difficult, if not impossible. Moreover, to construct such a thicker laminate and then reduce it defeats the aim of Slattery in forming the dogbone structure. Slattery seeks to concentrate nickel metallization at the ends, which concentration is dissipated by a reduction. Hence, the subject matter of Claims 29-35 and 37-43 is allowable.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
10. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael La Villa whose telephone number is

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(571) 272-1539. The examiner can normally be reached on Tuesday, Thursday, and alternating Fridays.

12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Michael La Villa  
12 April 2005

MICHAEL E. LAVILLA PH.D.  
PRIMARY EXAMINER